VOLVO RELIABILITY

Reliability means your car starting first time every time and going on indefinitely without ever breaking down. It is essential, therefore, that your car has a reliable engine and auxiliary components. Volvo's have an enviable reputation in this field substantiated by many independent surveys.

WILL IT START FIRST TIME?
THE ELECTRICAL SYSTEM
Volvo carry out many of their tests in extremely harsh Scandinavian winters and Volvo cars in the UK feature the same components as those tested and sold in northern Scandinavia.

In extremely cold weather [1] driving conditions change radically. Plastics and rubber materials become more brittle; oil thickens; sparking plugs require a much higher voltage for combustion and there is a greater loss of heat during combustion. On many cars the ignition system is a common source of starting problems and breakdowns. Volvo utilize a system which guarantees a very high level of reliability.

THE BATTERY
The battery provides the energy which starts the car and therefore Volvo fit batteries with a larger than average capacity, 60 ah in the 240 series and 70 ah in the 260 series. These batteries provide sufficient power to feed a heavily worked starter motor even on very cold days.

THE STARTER MOTOR
To enable the engine to start easily even under the severest weather conditions Volvo have fitted a very powerful starter motor, 1.1 hp (approximately 800 watts).

THE DISTRIBUTOR
The distributor is made of aluminium, rather than the traditional cast iron, which makes it possible to maintain very close dimensional tolerances. The distributor cap is made of polyester type plastics

1

which is lacquered inside to give a much superior quality finish and to prevent dampness from forming inside [2]. The transistor unit which supplies voltage to the coil has been specially developed for use in Volvo ignition systems, because normal transistors do not meet the operational standards set by Volvo.

The fuel injection version of the 200 series is fitted with a breakerless transistorised ignition system [3], which has a very long life and is more reliable than conventional systems.

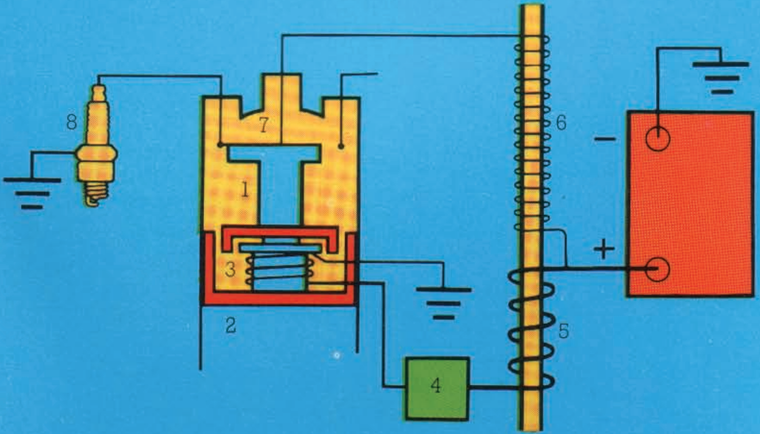
The alternator has a rating of 55 amps. This powerful alternator provides charging current, even when the engine is running at idling speed, which means many of the features which are fitted as standard on the 200 series, for example day running lights, do not take any extra life out of the battery.

Finally, all the electrical components are very well protected from the weather, which means they suffer little from cold and wet which in turn enables trouble free starting.

To demonstrate Volvo's confidence Motor Magazine were asked to carry out tests. The engine bay of a 244 DL was swamped with water for 10 minutes from a fire hose; after a 2 minute interval 'the starter motor engaged – the engine sprang to life immediately' [2].

CARBURETTOR – PRE-HEATING SYSTEM

The carburation system has an important effect on the ease of starting, and the smoothness with



The rotor (1) rotates within the permanent magnet (2). This induces voltage impulses in the winding (3) which are sensed in the transistor unit (4), which triggers and makes the circuit to the primary winding (5) of the ignition coil. Here, a high tension is induced in the secondary winding (6). Via the distributor arm (7) the high tension is fed to the correct spark plug (8).

3

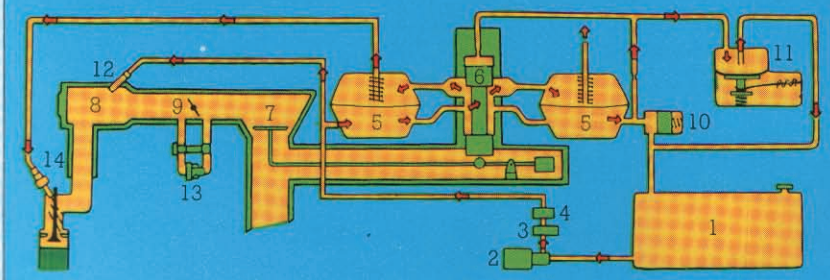
which the car runs. Volvo carburettor engines have a system for pre-heating the induction air to ensure smooth running immediately after every cold start [4].

A duct draws air from a hot spot 1. on the exhaust system. This part of the system is rapidly heated and pre-heats the induction air so effectively that only 2 minutes after cold starting the induction air has achieved its optimum operating temperature giving smooth reliable running.

A second duct 2. feeds in cold air and gradually opens – the temperature of the pre-heated air increases (a thermostat controls the flow of this air) and enables an ideal working temperature to be maintained in the carburettor 3. in the summer, which prevents overheating and stalling. Further benefits of this system are that in winter it will prevent the carburettor from icing up and snow from accumulating in the air cleaner 4. Once again, this helps to give reliable first time starting.

4

THE CONTINUOUS FUEL INJECTION SYSTEM
The B21E engine fitted to the Volvo 244 GL and 245 GL is equipped with a mechanical fuel injection system [5] which develops greater power (123 bhp) than its carburettor counterpart. Unlike most other petrol injection systems, the Volvo system has no electronic components and was developed by Bosch exclusively for Volvo and Porsche. The design is based on a vacuum principle and the main advantages of this system are a relatively simple design, high reliability, quiet running, excellent performance, economical fuel consumption and ease of servicing.



1. Fuel tank
2. Electric fuel pump
3. Pressure accumulator
4. Filter
5. Differential pressure valve
6. Control valve
7. Air flow meter
8. Induction pipe
9. Throttle valve
10. System pressure valve
11. Control pressure valve
12. Cold starting valve
13. Supplementary air valve
14. Injector

5

WILL IT KEEP GOING?
THE ENGINE
Once the car is started it is essential to have a reliable engine which performs well in all types of weather and in all types of conditions. An important feature of the latest Volvo engines is that at no time are they over stressed. The engines being capable of developing much more power than the bhp they actually produce.

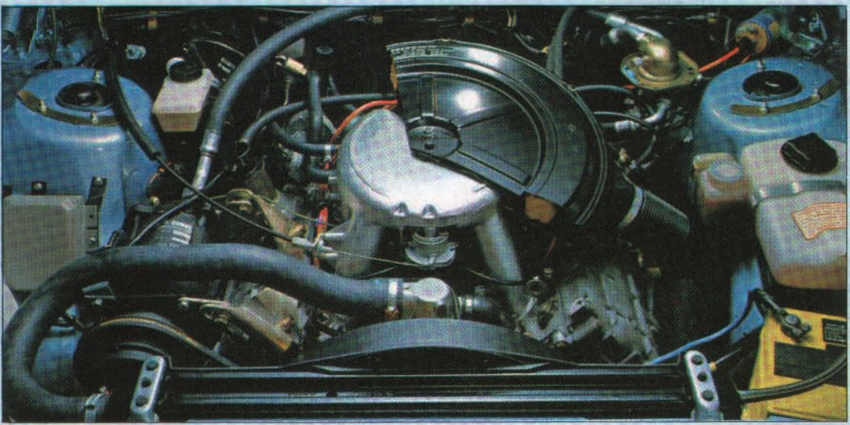
Another feature is the introduction of the overhead camshaft, which gives quieter running, and a more precise valve system. As there are no push rods there are fewer moving parts, which means fewer adjustments, fewer visits to the garage and a longer trouble-free service life.

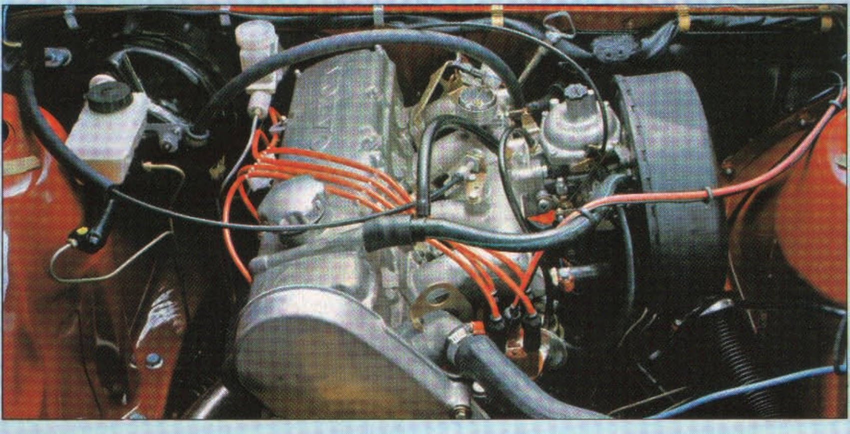
VOLVO SEALED COOLING SYSTEM

The Volvo 200 series is fitted with a sealed cooling system. This includes the use of an expansion tank which is a reservoir for air and a reserve volume for the liquid. This system is very reliable as it can withstand a higher level of pressure and excessive heat without losing any coolant. The transparent expansion tank means it is easy to check the level of the coolant, which includes anti-freeze, put into the system at the factory. Therefore there is no risk of damage to the radiator and cooling system in the coldest winters.

Twin fan belts are also fitted to certain models which means there is less loading on each belt which in turn increases reliability and life span of the belts and means you will have less chance of being caught out with broken fan belts.

The best way to see how reliable existing Volvo owners have found their cars is to ask around. An independent survey shows that in a test of 6,000 2 litre cars, the Volvo was off the road considerably less than any other.





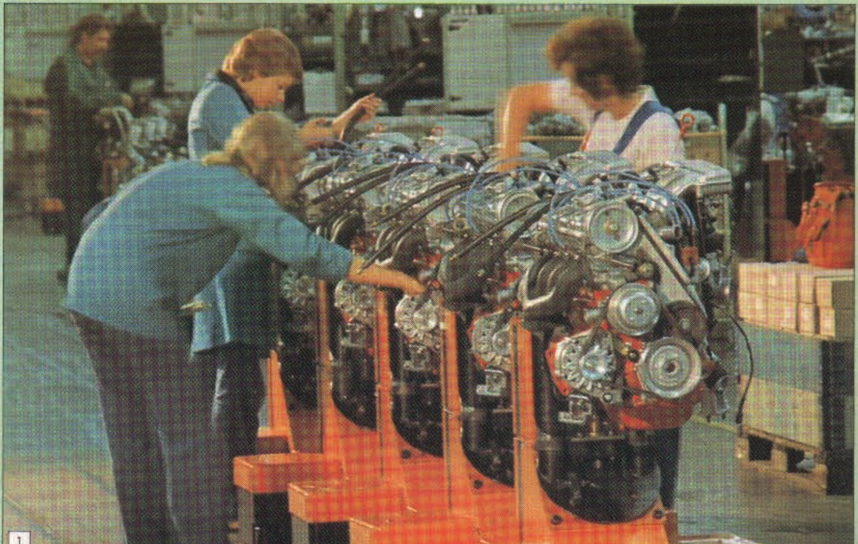
VOLVO QUALITY

A major factor which has influenced people to drive Volvo has been the quality of construction which has always been superior to most other cars in the same price range.

The quality associated with Volvo can be attributed to the following:
1. Investment in new plant and machinery and working conditions.
2. Quality control and pre-delivery testing and inspection techniques.
3. The exceptional painting and rust-proofing processes.
4. Product planning and continuing research and development.

INVESTMENT IN NEW PLANT AND MACHINERY, AND WORKING CONDITIONS
Unlike many manufacturers Volvo have spent millions of pounds in the last five years on building two new factories, the new assembly plant at Kalmar, and the engine works at Skovde [1]. Together with vastly improving the working conditions at the principle assembly plant at Torslanda in Gothenburg. Many professional people, including industrial psychologists, sociologists and doctors were consulted when designing these new factories. They made many constructive suggestions, which were implemented from construction.
Throughout all the factories Volvo have devoted a great deal of effort to creating ideal working environments. For instance, ceilings have been lowered, extra partitioning installed to reduce noise levels, careful thought given to colour schemes to ensure a bright and clean working place, large windows fitted to give workers as much natural light as possible and views over landscaped gardens.

The revolutionary working conditions of Volvo assembly workers are exemplified by the unique assembly plant at Kalmar, probably the ideal environment for building a quality car. Here separate working groups each have a part of the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factory at their own disposal and the car body is carried along by battery powered carriers. With the aid of this device, which for instance, Volvo was the first manufacturer in the world to introduce, the car body can be turned to 90° on its side, thus, an ideal working position can be found for any worker [2]. Most of the 25 teams there have their own personnel facilities, for example, coffee corners, showers, saunas, drying cabinets, refrigerators and wall-to-wall carpeting.

2

At the new engine plant at Skovde the labour force work in teams. The monotony is taken out of working life by automatic handling devices which ensure that it is easy to work on the engine; this also makes it possible to employ a high female work force, nearly 40 %, compared with 3 % in the average engine factory. Team work also enables a high level of job rotation, which again helps to reduce monotony.

At Torslanda [3], which is the main Volvo factory complex, new recruits are trained in at least three different tasks to enable them to enjoy the benefits of job rotation. Competition between the four main departments in car production, 1. pressing; 2. body work; 3. painting; 4. assembly, is encouraged as it increases the pride and quality of workmanship.

3

QUALITY CONTROL METHODS
Quality inspection is carried out parallel to the assembly process and a great deal of responsibility rests on the assembly worker, who inspects his own work. Additional quality control engineers check at certain stages of the assembly process. One computer is used entirely for quality inspection and this information is constantly noted. If any defect is discovered it is corrected and a report sent to the team responsible so that the error can be avoided in the future. For example, although spot welding is carried out by a fully automated process, which ensures that each of the 10,000 spot welds on a 200 series body is located in exactly the same place on every body, and each spot weld is strong enough to stand the entire weight of the

car's body, the system is checked again by specially trained quality control inspectors.

In addition, the whole skin of the Volvo is stronger and more durable than on most other cars. For instance, important structural members can be up to 2mm thick, which is much stronger than normally found in a car body [4].

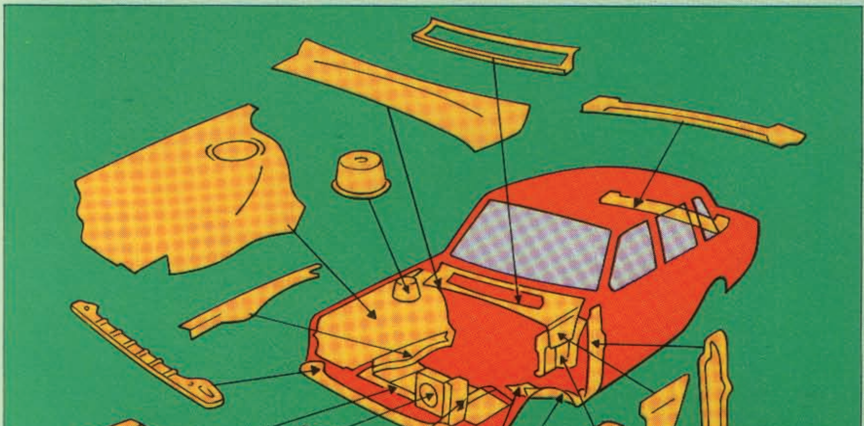
4

Further quality control is carried out on the gear box which is tested in each gear. Engines are picked out on a random basis daily from the assembly line and exposed totally to 7 hours bench testing at full loads.

Unlike many other car manufacturers Volvo components come from all over Europe and in particular Great Britain. Therefore, Volvo have a much wider choice of suppliers when they are searching for new components. A very vigorous quality control system based upon systematic checking is laid down to the specification supplied to the contractor. Volvo have given this matter constant attention and inspection is often carried out by Volvo's own personnel at the sub-contractor's factory. Volvo in fact even have a buying and quality control department located in Birmingham as there are no fewer than 221 UK suppliers involved.

RUST PROOFING AND PAINTING PROCESS

The air on the west coast of Sweden is very salty and produces some of the worst climatic conditions in the world for the corrosion of metal. As Volvos are sold throughout the world in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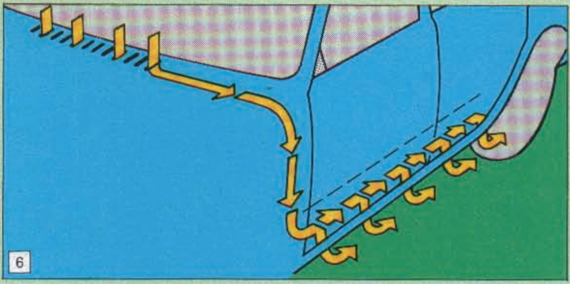
climatic conditions ranging from near Arctic to the hot and humid Far East, a great deal of attention has been given to rust protection. For several years Volvo have made specially exposed parts of the car body from hot dipped zinc coated sheet [5] and each Volvo body includes approximately 6½ lbs of zinc coating. Of specific importance are the body sections which absorb the forces acting on the front suspension and therefore more thorough rust proofing is given to these particular areas than is found on other makes of car with similar type of suspension. Additional protection is given to the door sills. These are cavity ventilated by air which enters up the vent below the windscreen and is then carried down by the slipstream to emerge through vents underneath the car [6].



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Therefore, the sills are kept free, at all times, from condensation. The bumpers are made of a zinconium light alloy and the bright work from stainless steel. The silencer and tail pipe have been aluminised and the brake tubing is made from seamless cupro nickel alloy. Volvo were the first car manufacturers to fit brake tubing of this type.

THE PAINTING PROCESS [7] [8]

To help ensure that a quality car remains a quality car the following rust proofing processes are carried out on every car body.

1. The body is sprayed with an acidic zinc phosphate solution, to give better adhesion between paint and metal.
2. The body is rinsed and dried.
3. The body is submerged in an electrically charged bath of paint.
4. The joints are sealed with a special compound.

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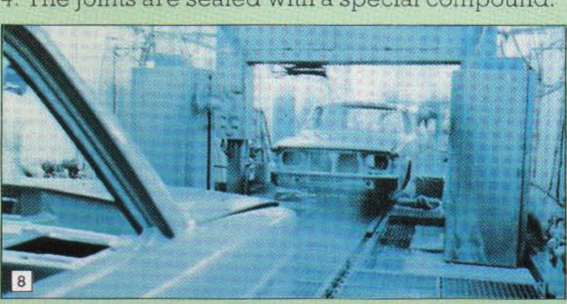

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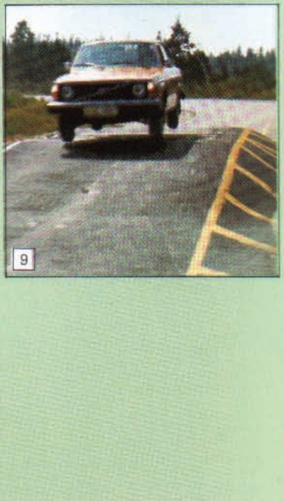
5. The door sills are coated with polyester to protect them from flying stones ; stone chip paint is applied on the lower half of the body sides.
6. Rust proofing paint is sprayed into the doors.
7. Filler coating is applied to even out any irregularities in the surface and sealer applied.
8. The body is oven hardened and passes a long line of quality control stations where additional

sealing and insulation is carried out.
9. Top coatings are applied, wet on wet.
10. The entire underside is treated with a rust proofing fluid, and particularly exposed parts are coated with an additional compound.
11. A rust proofing fluid is sprayed into the cavities with 14 different jets used to spray the fluid into the most difficult parts.
12. Volvo do not fit any unnecessary trim onto their cars as this kind of trim either rusts itself or collects rust where it is attached to the car body.

RESEARCH AND DEVELOPMENT – PRODUCT PLANNING

From the initial stages any new Volvo is designed with quality in mind. At the Volvo technical centre at Torslanda over 1200 technicians are employed putting cars through tests in wind tunnels, climatic chambers, laboratories and test tracks, in fact under conditions that are much worse than any motorist will ever encounter.

Volvo have also recently invested in a brand new car testing track at Hallered. Two basic types of tests are carried out, (a) functional tests, such as fuel consumption, maximum speed, passenger compartment comfort and wind sensitivity, (b) life time tests [9] [10] – use of severe road conditions and high loading to reduce damage and weakness which would normally take several years and thousands of miles to detect under road driving conditions.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Volvo also believe in giving the customer a say in how he or she would like to see future Volvo models built. The Buyer's Questionnaire is put into all Volvos in the UK to be returned to Volvo with constructive comments on how Volvo design and quality can be improved. These comments are then forwarded to a special product development department in Sweden.

10

VOLVO COMFORT

1

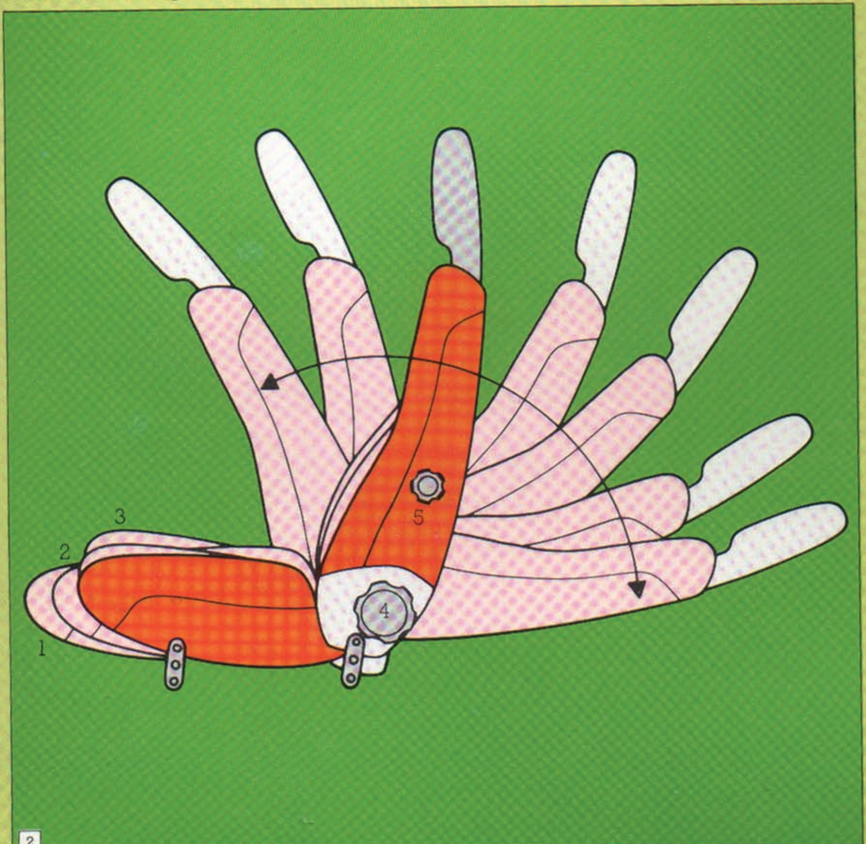
Car comfort and convenience imply many things. The basic requirement is for the driver and passengers to have plenty of room so they can sit naturally, but still carry all the luggage they need.

The driver needs plenty of space around him so that he can sit in comfort and drive as well, after all a comfortable driver is also a safer driver.

The Volvo front seats have an unusually wide range of adjustments which enables the driver to choose the correct individual driving position [1].

FRONT SEAT ADJUSTMENTS [2]

1. Backwards and forwards movements are carried out by releasing a bar running the full width of the seat. The range of adjustment is nearly ten inches.
2. The glide rails are inclined, so that in the seat's fully forward position the seat is $\frac{3}{4}''$ higher than when moved fully back.
3. The driver's seat height can also be adjusted quite simply by levers under the seat. The front and rear ends can be adjusted to three different positions each.
4. The back rest can be adjusted by means of a large convenient knob on the side of the seat. The back rest can move to a near horizontal position until it touches the rear seat.
5. Back rest tension can be adjusted by a lumbar support; the control of which is on the side of the seat. This control enables the driver to adjust the tension on his spine at any time, to reduce fatigue.



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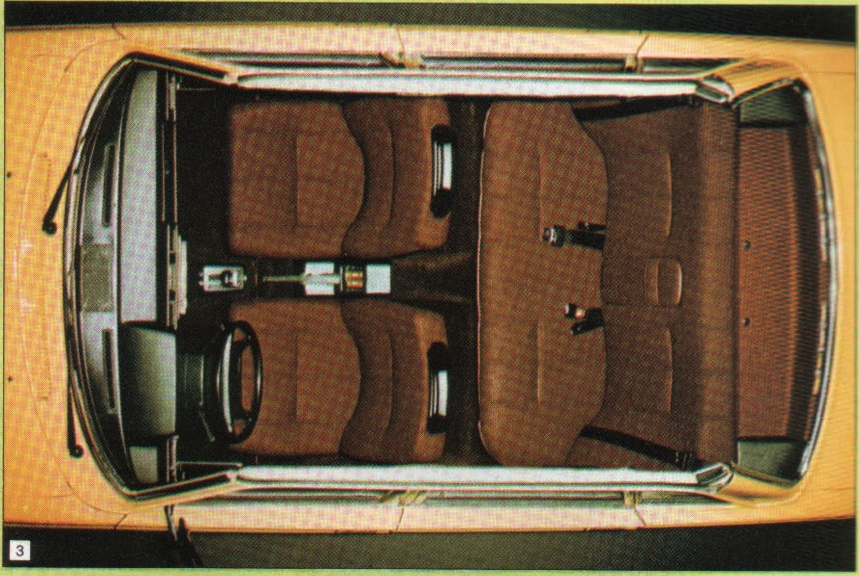
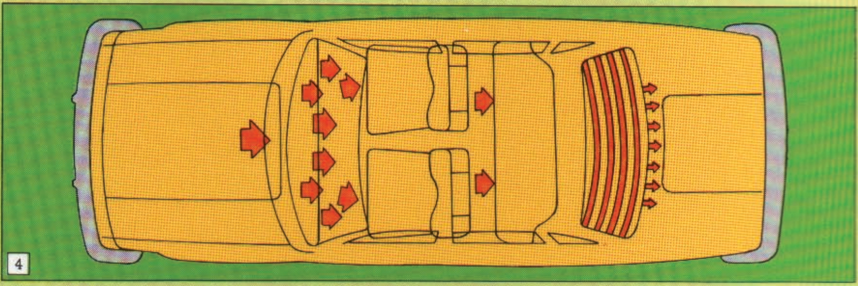
Another feature, too, is the amount of leg room that you get. Not just in the front but in the back too. For instance full six footers can sit in the back without hugging their knees [3]. The rear seats too give excellent support and are raised higher than the front seats for good visibility.



There is a good deal more to comfort than the way you sit. There's the environment of the car. The Volvo 200 series has a very sophisticated heating and ventilation system that keeps the air fresh and at the temperature you select. In fact the air inside the car is changed completely, every few minutes, even if all windows are closed. If it's cold you will benefit from the unusually powerful



heater. It can get the car up to 27°C when there is 25°C of frost outside. There are very few cars that give you so much control. There are nozzles in the dashboard, below the windscreen, on the front floor and on the rear floor. Stale air is drawn out of the car through vents under the rear window [4].

On the GL models a heated driver's seat is fitted as standard. This operates automatically when you switch the ignition on, and in 3 minutes will get the temperature up to 27°C even if it's less than 14°C outside.

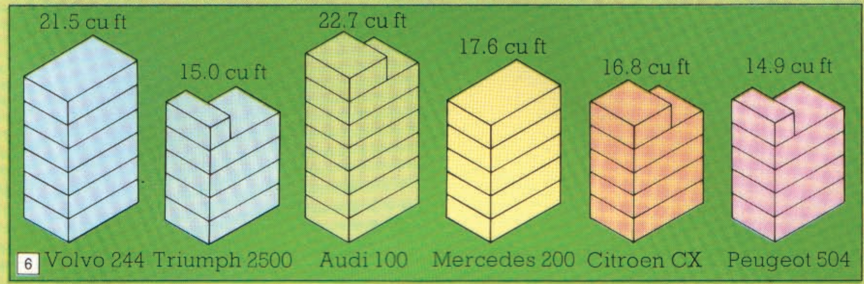
Another important factor in making a car a comfortable place to be is noise, or the lack of it!

Extensive tests have taken place by Volvo under special conditions in their laboratories. The new engine, because of its overhead camshaft and the

aluminium alloy head is quiet [5] But just to ensure quietness the whole front of the passenger compartment is sealed off from the engine by three skins of insulation. There is also extra padding in the roof (which, like the floor, is inclined to pick up any little vibration).

THE LUGGAGE COMPARTMENT

To many people the luggage compartment is equally as important as the interior dimensions and you will see below how the Volvo boot compares with other luxury cars [6].



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Six ordinary suitcases will fit into the 21.5 cu ft capacity Volvo boot, in fact it will easily swallow the luggage for five passengers [7]. The spare wheel is ideally situated standing upright in the side of the boot, so if you are unfortunate enough to have a puncture you will not have to unload all the contents of the boot to reach the spare wheel.

If carrying capacity is your major worry, then we have the Volvo 200 series estate cars – the 245 and

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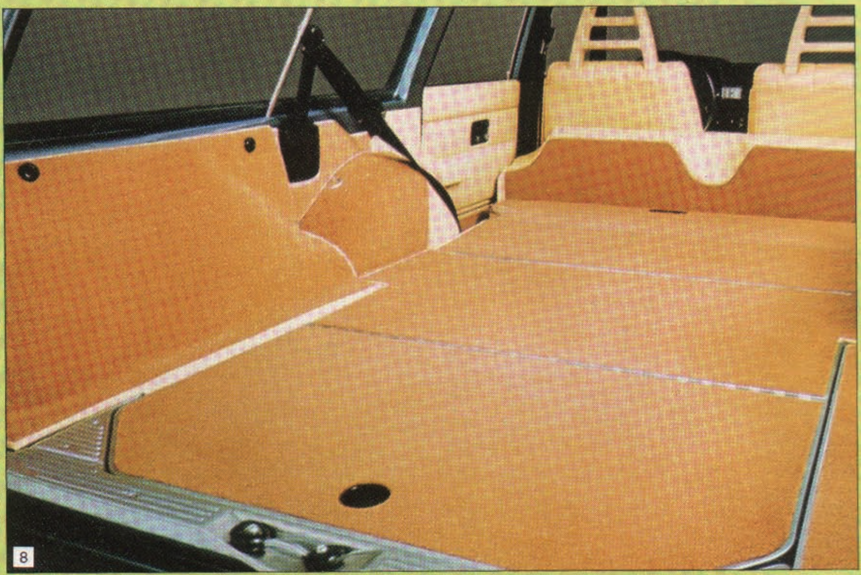
the 265 [8] You can see that these estate cars have ample carrying capacity, in fact the Volvo 245 and 265 will each carry a full 6 ft settee without any difficulty.



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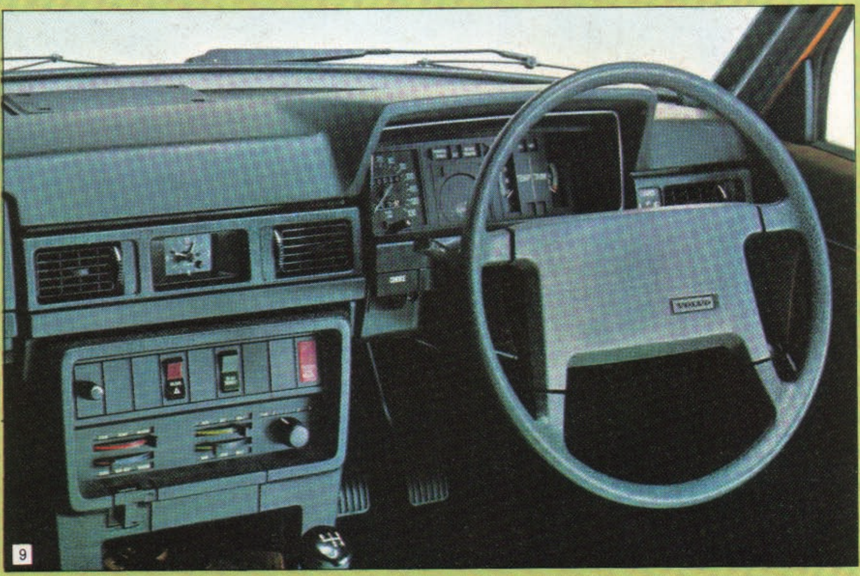
So you have a car where everyone sits comfortably, and all the luggage is carried without any trouble at all.

Finally, we have taken steps so that you do not have to stretch for the controls when you are driving. All the controls are to hand and those you use most are nearest, they are clearly marked and specially designed to make them difficult to confuse [9]. It is surprising how many cars have light switches that can be muddled with windscreen wipers.



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VOLVO SAFETY

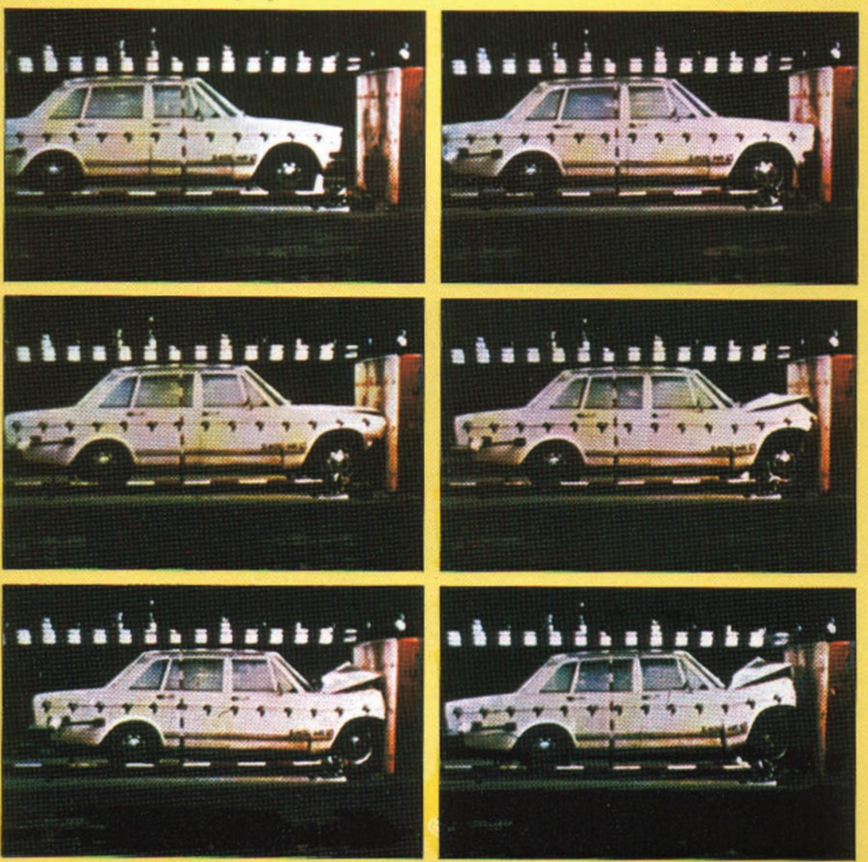
Volvo is synonymous with safety. Millions of pounds have been spent on research into car safety both in respect of primary safety, i.e. accident preventive, and secondary safety i.e. injury preventive. AB Volvo have an ongoing experimental programme which involves experimental safety vehicles and special laboratories and test facilities, actual and simulated accident investigations. In 1973 Volvo investigated every fatal accident in Sweden in conjunction with the Swedish Traffic Authorities: Fatal accidents in Volvos were 61% lower than the average.

PRIMARY SAFETY : ACCIDENT PREVENTIVE

To avoid an accident a driver needs a responsive and reliable car so that he has the means to drive safely and avoid unexpected occurrences. Volvo have made the 200 series cars exceptionally safe to drive. They have excellent acceleration, especially at overtaking speeds. Stable and predictable cornering and handling ability. Good all round visibility, an excellent braking system and a well designed interior with easy to operate controls.

OVERTAKING ABILITY

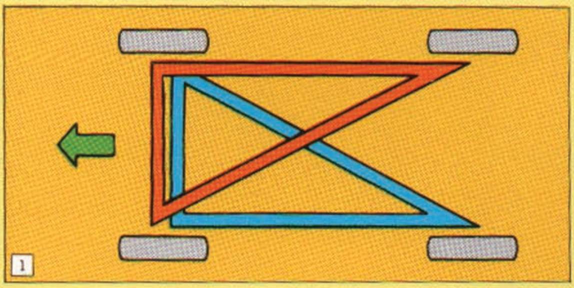
The Volvo B21 engine gives its best performance in the middle range or overtaking speed area. The torque curve is such that the car has excellent overtaking ability which, in fact, is far more important than the top speed of the car.

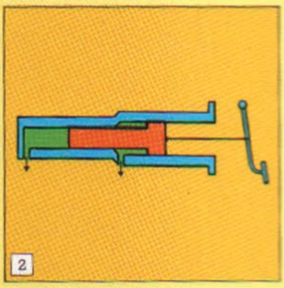


STEERING
On the new 200 series Volvo have introduced rack and pinion steering (see Volvo Handling) which is more responsive and easier to drive than the system used on the previous 100 series.

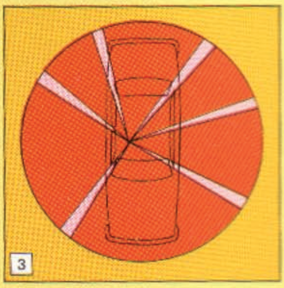
SUSPENSION SYSTEMS – HANDLING AND CORNERING
When driving on unfamiliar roads it is likely that one may approach a bend too quickly and take evasive action, this is when the very safe and predictable Volvo handling and cornering ability can be put to the test. On the front suspension Volvo use spring strut, at the rear a live rear axle. (See Volvo Handling).

BRAKING
The Volvo has always had an enviable reputation for one of the safest and most foolproof braking systems. Disc brakes on all four wheels are standard. Discs do not fade as fast as drum brakes and give even braking on all four wheels which minimizes the risk of the car pulling sideways and skidding under harsh braking. Volvo also utilize a triangle split dual circuit braking system [1], using a stepped bore master cylinder [2]. This



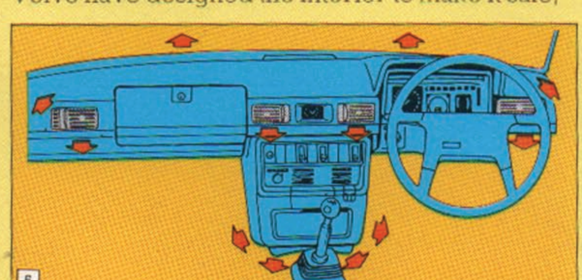


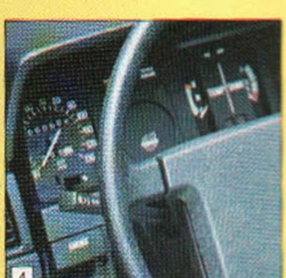
means that each circuit controls three wheels, two front and one rear. This system gives 80% braking efficiency even with one circuit totally inoperative.



VISIBILITY
The design and construction of all window pillars are vitally important to all-round vision [3]. The windscreen pillar profile has been turned so that its narrowest edge faces the driver. Its thickness is less than the normal distance between your eyes. The horizontal field of vision on the 200 series is 91 % higher than other cars in its class. One reason is that the roof pillars on other cars are considerably wider than those of the Volvo. A drivers door mirror is also fitted as standard on Volvo 200 series.

INTERIOR
Volvo have designed the interior to make it safe,





easy to the eyes and comfortable so that you can concentrate easily on the road ahead, without distraction. The dashboard and steering wheel have been designed so that the speedometer and other instruments can be seen easily [4]. All controls are within easy reach and clearly identified. There is an exceptionally powerful heater, while the ventilation system is designed to deal even with Californian summers [5]. An in-built thermostat allows you to set the temperature at the beginning of your journey without the need of constant re-adjustment during driving. There are 12 air inlets which allow a combination of warm air to the feet and cool air to the face. Stale air is removed through vents below the rear window and a check valve prevents exhaust gases from being driven into the car. All Volvo models have a heated rear window fitted as standard.

6

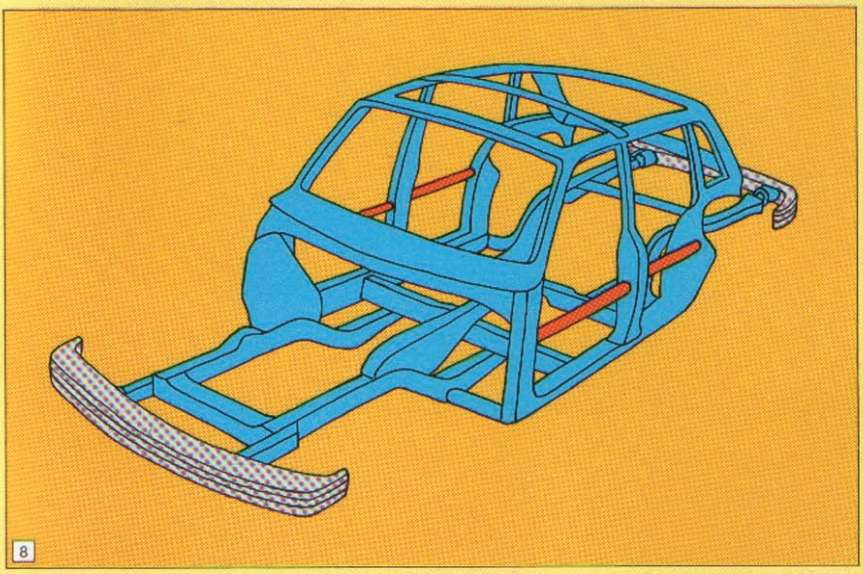
Volvo believe a comfortable driver is a safe driver. Spinal forces have been measured and also the spinal muscles under varying conditions. These tests carried out by a Swedish medical team have proved that a variable lumbar support [6] reduces the strain on the back muscles, relieves tension and enables you to concentrate entirely on driving the car. The whole Volvo seat has been designed with this in mind and allows a wide range of adjustments.

7

LIGHTING
A safe car is also a well lit car, so you can see clearly and also be seen by other motorists and pedestrians. This is why Volvo were the first manufacturer to fit day running lights [7]. These operate with the same lens as the side lights and are lit when the engine is running – they do not dazzle or cause glare.

Volvo 200 series also have halogen headlights as standard. Halogen bulbs have a high intensity, both when dipped and on full beam and retain this intensity throughout their lifetime.

SECONDARY SAFETY : INJURY PREVENTIVE
It does not matter how good a driver you are,



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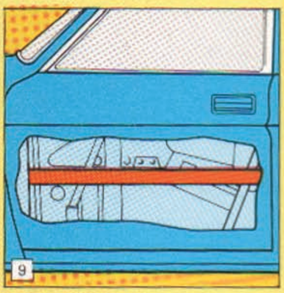
there is always a chance that you could be in the position where you cannot avoid being hit by another car. Volvo have designed the 200 series cars to protect you and your passengers in this unfortunate event with a specially constructed safety cage [8], including side impact protection, crumple zones front and rear, fully collapsible steering column, safety padded interior and laminated windscreen.

THE BODY SHELL

The most effective protection offered by any car is its body shell. The front and rear ends should be able to absorb energy while the occupant area should be protected. The Volvo steel body forms a protective cage around all the occupants. Two members protrude into the engine compartment, side struts support the rear end of the car. Torsional rigidity is maintained by the rear wall, or the tail panel of the boot and the panel behind the rear seat back-rest. Estate cars are fitted with a strong frame which entirely surrounds the rear tail gate. The window frames around the doors are made of steel and are welded to the doors. The floor panel is reinforced by large transverse box sections under the seats, which improves the resistance of the body against side impact, and also provides a safe anchorage for the front seats.



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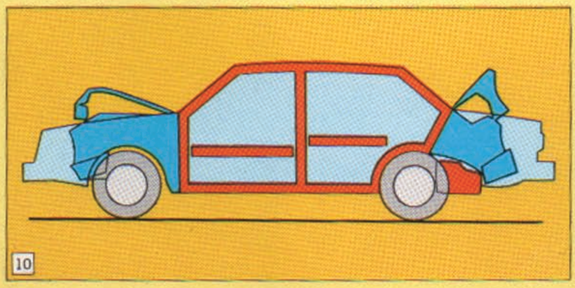
All side doors are strengthened with built-in tubular steel members [9] and door latches are of the burst proof type which stay shut even if subjected to considerable deformation. All interior and exterior door handles are recessed to avoid unnecessary protrusions. The rear doors and the tailgate on the estate car are fitted with child-proof locks to prevent children from opening these doors from the inside.

As the upper anchorage of the Volvo spring strut front suspension is actually part of the body, the housing is reinforced by a system of cross members which absorb the forces working on the springs. These members also absorb impact in the event of a collision.

A roll over bar is also fitted and it is interesting to note that if the 200 series Volvo is dropped on its roof from a height of 7½ feet the roof will not deform more than 7.5 inches. Which is four times better than the regulations laid down by the United States Authorities.

The front and rear section of the Volvo body have been designed to absorb impact and collapse in a pre-determined manner [10]. The engine is forced under the passenger compartment, the spring strut suspension folds predictably under pressure and the bonnet is specially designed so that it will



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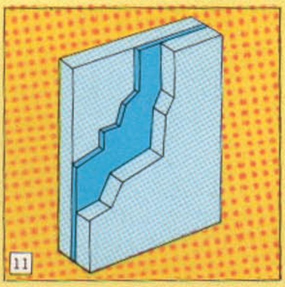

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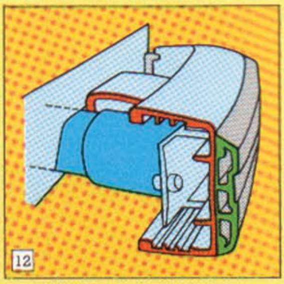
fold up and not be forced into the windscreen. However, the windscreen, too, is a high impact laminated type, standard since 1944. It consists of two panes of glass bonded together by a plastic film [11]. It does not become opaque if hit by stones, so you still have a good field of vision, unlike the normal toughened glass screen which will shatter into thousands of small pieces when hit by a stone. Volvo's high impact type of windscreen is also extremely elastic and can cushion impact. The windscreen should not shatter even in the case of a severe crash.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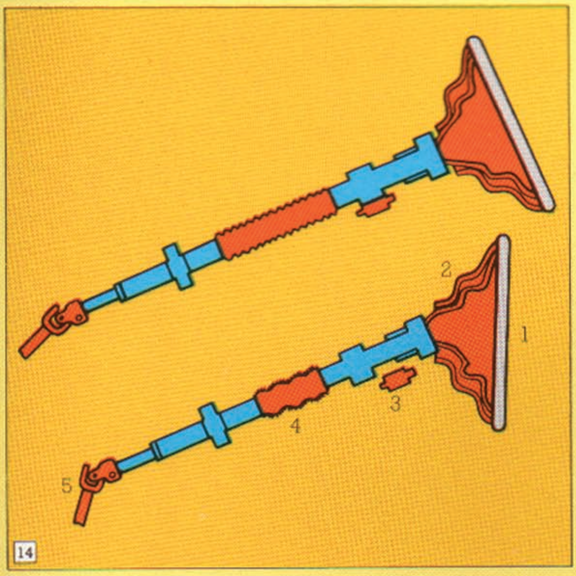
13

The Volvo energy absorbing bumpers [12] [13] absorb impact at up to 3 mph and at this speed no damage will occur to any of the body panels or lights. Obviously, this is a safety feature, but it can also save you money and irritation in town traffic and when parking.

The fuel tank is positioned close to the rear axle and is completely isolated from the passenger compartment and luggage area, so in the event of a rear collision the petrol cannot escape into either of these areas.

THE STEERING MECHANISM
If a head on collision occurs it is essential that the



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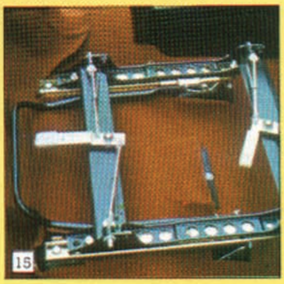
steering mechanism collapses correctly and sufficiently to minimize the risk of head and chest injuries to the driver. The Volvo safety steering system was introduced in 1956 and has been consistently modified so that today it has five major safety features [14]

1. The large padded hub of the steering wheel, designed to absorb impact.
2. The crumple zone which under pressure allows the steering wheel to align with the driver's body.
3. A slip coupling permits the steering tube to be forced down into the engine compartment.
4. Under excessive load a plastic joint gives way and the lower section of the steering column can move down into a telescopic sleeve.
5. The lower section of the steering shaft features a joint which is angled so that if the front of the car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is badly deformed the two halves of the column fold like a pen knife.

INTERIOR SAFETY FEATURES: THE SEATS
The front seats slide on a very strong frame, which in turn is screwed into a special transverse member which is welded to the floor pan [15]. This support not only securely anchors the seat and prevents it from moving forward in the case of severe impact, it also increases the stiffness of the floor pan.

HEAD RESTRAINTS
Head restraints [16] are built into Volvo front seats. They are of open construction to allow maximum visibility for rear seated passengers, and also when reversing. These restraints minimize the risk of neck injury and reduce the effect of whip lash in a rear end collision. They are very stiffly padded, so that they will not break or deform under pressure.

SEAT BELTS
Volvo fit three point inertia reel front and rear seat belts, as standard with a lap belt for the centre rear passenger. The load is spread equally over the diagonal and lap belt due to the slip joint. These belts are always correctly tensioned and require no adjustment for use. They also enable the wearer to move around inside his seat. They can be operated by one hand and the front seat belt locks are illuminated at night. Volvo also fit front and rear seat belt warning lights [17] which flash and tick until the seat belts are engaged. Incidentally Volvo first fitted seat belts as standard in 1959.

SAFETY PADDING
Finally, Volvo have made the whole interior of the car as safe as possible. The dashboard is not made of wood, as it can easily splinter and does not absorb energy under impact, but is made of a very thick non-reflective energy absorbing material. The switches are non-protruding and the stalks on the steering column are designed to break away if hit hard in an accident.

All of this helps add up to a car which is a pleasure to drive, light and responsive with reserves of power at the right time to make sure you do not get into trouble. However, Volvo also give you the security which you need in today's crowded motoring environment.

16

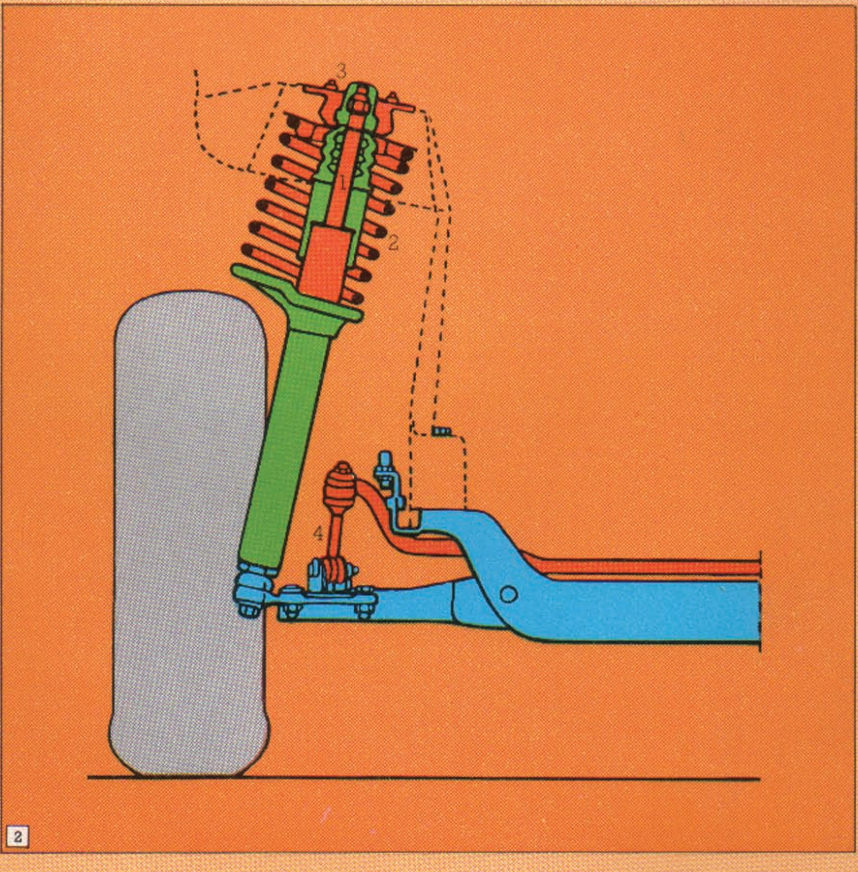
17

VOLVO HANDLING

The 1978 Volvo 200 is a result of a £60 million continuing research and product improvement programmes by AB Volvo. This effort ensures a continuity of the Volvo reputation for reliability, quality, economy and safety. In the past however Volvo's were thought by many to be heavy and difficult cars. Thus the £60 million investment has been directed towards developing a car which embodies all the traditional Volvo qualities, but is responsive, has exceptionally good road holding and does not drive like a tank!
How a car handles [1] largely depends upon two factors, its suspension and its steering.

1

SUSPENSION
Many cars have a system which provides a comfortable ride but relatively poor handling. Or one that is good around bends but transmits every little bump. Volvo, after a great deal of work, have introduced a form of front suspension which gives you the best of both worlds. It is called the spring strut system and its advantages over alternative systems are (a) it is extremely simple and less likely to go wrong, (b) it is set right out against the wheels which makes the whole car more stable. Of course the spring strut design is not unique to Volvo. Why then haven't Volvo used it before? The answer is that the spring strut suspension is very sensitive to vibration and Volvo were not prepared to put it into their cars until they were sure it was right.



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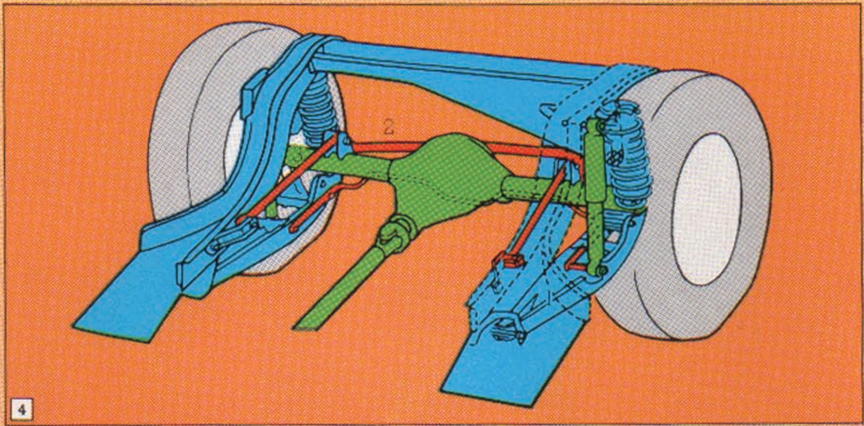
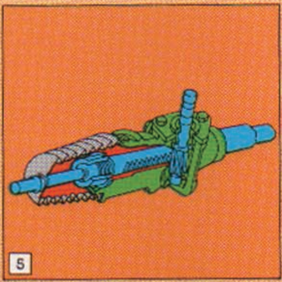
In a Volvo the spring strut used in the 200 series front suspension [2] [3] is very close to the wheel. A large strong shock absorber 1 moves up and down at the top of the strut inside the coil spring 2 and is fixed in a specially reinforced plate high up in the wheel arch. 3 One of the ways Volvo got round the problem of vibration was to put in a link arm 4 to control the movement of the axle. At the rear of the car [4] Volvo did three things, 1 inserted a support arm and stopped the axle moving backwards and forwards, 2 put in a track rod to stop it moving from side to side, and 3 introduced a torque rod to prevent wind up when accelerating or braking. To make sure the car does not roll on corners Volvo have added a stabilizer. There was, however, one other problem Volvo had to solve. Because the wheels and tyres pick up vibration they had to make sure they were always in balance. This was done in two ways. Firstly Volvo devised a lathe turned collar on the top of the axle to position the wheel more exactly and make wheel balancing more simple. Secondly they introduced tyres built around steel cords which makes them perfectly round. These steel braced radial tyres are wider than usual to give better grip, and they last longer. The result is a suspension that has all the good things spring struts can offer without the disadvantages.

3



4

STEERING
The 200 series Volvos have light positive steering as a direct result of a system that is safer, easier and more efficient than the one previously on Volvos. The rack and pinion system [5] works like this – the pinion fits like a cog into the rack and when the steering wheel is turned shifts the rack to the left or right. The rods at the end of the rack connect to the axle and turn the wheels in the required direction. Simple. This system has three advantages over any other kind of steering system. (a) It has fewer working parts; (b) it is very light to operate; and (c) it needs the minimum of attention.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Both the new spring strut front suspension and the new rack and pinion steering are exceptional by any standard. This together with better acceleration make the 200 series Volvo easier to drive than its famous 100 series predecessor.

VOLVO BUY BRITISH

A thriving British motor industry plays a vital role in the UK economy. And the UK automotive industry relies heavily on exporting original equipment and parts overseas, especially to Scandinavia.

AB Volvo is the world's largest single export customer of the UK automotive industry, purchasing materials to the value of £50 million in 1974 and £61 million in 1975.
Over 220 companies supply items used in the construction of the 200 series Volvo [1].

Volvo also buy British machine tools and special equipment, used in the car production process. Some British suppliers have links with Volvo going back as far as the 1930s, and in these troubled times stability of contract has been important for thousands of workers employed in UK factories.

AB Volvo operate an integrated system of material's handling for British suppliers, of which there are more than 220. All Volvo supplies are procured ex-works, which is, in effect, an incentive to export, since it's often easier for firms to supply direct to Volvo than to some British companies. To many of these AB Volvo is their major export customer, and is of prime importance to their turnover and continuity of production.

2

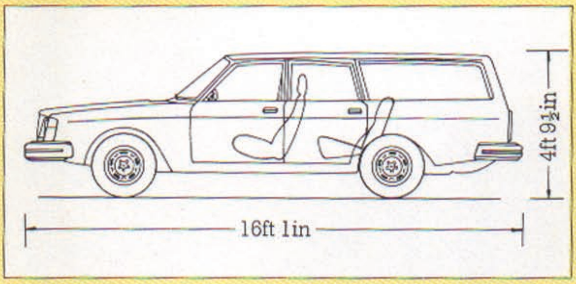
1

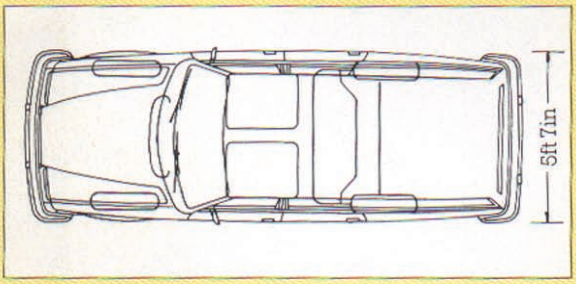
The integrated supply system also utilizes a high number of haulage contractors [2] to distribute and transport material from the factory into a purpose built Volvo cargo terminal located at Immingham at Humberside. This terminal handles roughly 400 tons per day production material [3]. There is also a Volvo material control department located in Birmingham to ease communications with AB Volvo and their British suppliers.

3

VOLVO 265

	265 GL	265 GLE
CC	2664	2664
No of cylinders	6	6
HP at r/m (DIN)	140/6000	140/6000
Carburation system	CI fuel injection	CI fuel injection
Octane rating	93	93
Fuel tank capacity	13.2 imp gall/60 litre	13.2 imp gall/60 litre
Transmission	4 speed manual with overdrive (automatic transmission available)	3 stage automatic
Wheels	5.5J - 14 in	5.5J - 14 in
Tyres	Steel braced radial ply 185 SR 14	Steel braced radial ply 185 SR 14
Length	16 ft 1 in	16 ft 1 in
Width	5 ft 7 in	5 ft 7 in
Height	4 ft 9½ in	4 ft 9½ in
Kerb weight	1465-1470 kg	1465-1470 kg





Standard equipment 265 GL, 265 GLE
Dual circuit, power assisted all-disc brakes, triangle split. Power assisted steering.

Safety cage construction, side impact protection, roll over bar, 5 way collapsible steering system, impact absorbing bumpers.

Rheostat controlled instrument lighting. 6 figure mileometer. Tripmeter. Coolant temperature gauge. Warning lamps for handbrake and brake circuit failure. Bulb integrity sensor. 4 way hazard warning lamps. Glove box light. Quartz clock. Cigar lighter. 'Fasten seat belts' reminder (front and rear). Cargo area light. Vanity mirror. Headlamp wipers and washers.

Driver's seat lumbar support and height adjustment. Leather upholstery. Electrically heated driver's seat. Illuminated rear ash tray. Head restraints on front seats. Inertia reel seat belts front and rear, lap belt centre rear seat. High impact laminated windscreen. Tinted glazing. Electrically heated tailgate window. Tailgate wiper and washer. 2 speed windscreen wipers and electric windscreen washers. Intermittent wipe/wash.

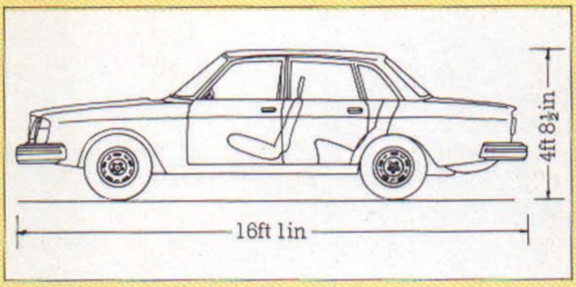
Rectangular halogen headlights with separate reflectors for main and dipped beams. Automatic day running lights. Automatic reversing lights. Engine bay light. Rear view mirror drivers side. Courtesy light beside tailgate. 3 speed fan and 12 inlet heating and ventilation system. Child proof locks in both rear side doors and tailgate. Towing points front and rear, gross towing weight 29.5 cwt. 32 ft 2 in turning circle.

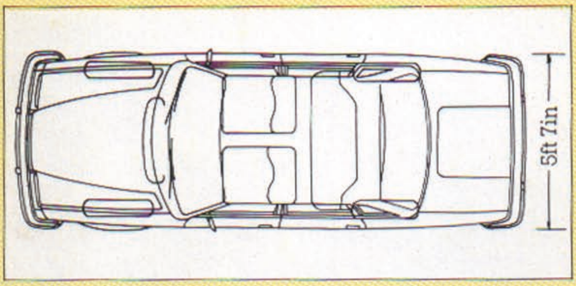
Oddments storage in front doors. Mud flaps. Metallic paint. Deep pile carpet. Foam covered steering wheel. Tachometer.

Additional standard equipment 265 GL models only
Air conditioning. Ventilated front disc brakes. Electrically powered windows. Stereo loudspeakers in front doors. Electrically operated outer rear view mirrors.

VOLVO 264

	264 GL	264 GLE
CC	2664	2664
No of cylinders	6	6
HP at r/m (DIN)	140/6000	140/6000
Carburation system	CI fuel injection	CI fuel injection
Octane rating	93	93
Fuel tank capacity	13.2 imp gall/60 litre	13.2 imp gall/60 litre
Transmission	4 speed manual with overdrive (automatic transmission available)	3 stage automatic
Wheels	5.5J 14 in	5.5J - 14 in
Tyres	Steel braced radial ply 185 HR 14	Steel braced radial ply 185/70 HR 14
Length	16 ft 1 in	16 ft 1 in
Width	5 ft 7 in	5 ft 7 in
Height	4 ft 8½ in	4 ft 8½ in
Kerb weight	1425-1475 kg	1425-1475 kg





Standard equipment 264 GL, 264 GLE
Dual circuit power assisted all-disc brakes, triangle split. Power assisted steering.

Safety cage construction, side impact protection, roll over bar, 5 way collapsible steering system, impact absorbing bumpers.

Rheostat controlled instrument lighting. 6 figure mileometer. Tripmeter. Coolant temperature gauge. Warning lamps for handbrake and brake circuit failure. Bulb integrity sensor. 4 way hazard warning lamps. Glove box light. Quartz clock. Cigar lighter. 'Fasten seat belts' reminder (front and rear). Boot light. Vanity mirror. Headlamp wipers and washers. Illuminated rear ash tray.

Driver's seat lumbar support and height adjustment. Leather upholstery. Electrically heated driver's seat. Head restraints on front seats. Centre armrest in rear seat. Inertia reel seat belts front and rear, lap belt centre rear seat. High impact laminated windscreen, tinted glazing, electrically heated rear window, 2 speed windscreen wipers and electric windscreen washer. Intermittent wipe/wash.

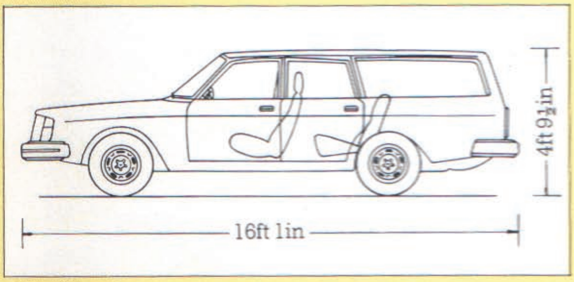
Rectangular halogen headlights with separate reflectors for main and dipped beams. Automatic day running lights. Automatic reversing lights. Rear fog lights. Engine bay light. Day/night rear view mirror. 3 speed fan. 12 inlet heating and ventilation system (264 DL). Child proof rear door locks. Towing points front and rear, gross towing weight 29.5 cwt. 32 ft 2 in turning circle.

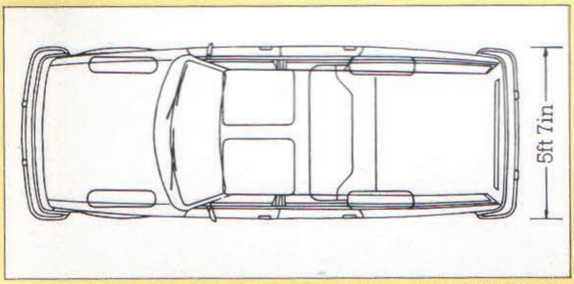
Oddments storage in front doors and fully carpeted luggage compartment. Sliding steel sunroof. Mudflaps. Metallic paint. Deep pile carpet. Foam covered steering wheel. Tachometer.

Additional standard equipment 264 GLE models only
Front disc brakes specially ventilated. Electrically powered windows. Rear sunblind. Plush or leather upholstery. Air conditioning. Stereo loudspeakers built into front doors. Rear door operated courtesy light. Spare wheel cover. Rear seat head restraints. Electrically operated outer rearview mirrors.

VOLVO 245

	245 DL	245 GL
CC	2127	2127
No of cylinders	4	4
HP at r/m (DIN)	100/5250	123/5500
Carburation system	Single carburettor	CI fuel injection
Octane rating	93	93
Fuel tank capacity	13.2 imp gall/60 litre	13.2 imp galls/60 litre
Transmission	4 speed manual (automatic transmission available)	4 speed manual with overdrive (automatic transmission available)
Wheels	5.5J - 14 in	5.5J - 14 in
Tyres	Steel braced radial ply 185 SR 14	Steel braced radial ply 185 SR 14
Length	16 ft 1 in	16 ft 1 in
Width	5 ft 7 in	5 ft 7 in
Height	4 ft 9½ in	4 ft 9½ in
Kerb weight	1350 kg (2977 lb)	1350 kg (2977 lb)





Standard equipment 245 DL, 245 GL
Dual circuit, power assisted disc brakes, triangle-split.

Safety cage construction, side impact protection, roll over bar, 5 way collapsible steering system, impact absorbing bumpers.

Rheostat controlled instrument lighting. 6 figure mileometer. Tripmeter. Coolant temperature gauge. Warning lamps for choke, handbrake application and brake failure. Bulb integrity sensor. 4 way hazard warning lamps. Glove box light. Clock. Cigar lighter. 'Fasten seat belts' reminder (front and rear). Vanity mirror. Door storage bins. Illuminated rear ash tray.

Driver's seat lumbar support and height adjustment. Cloth upholstery, full carpeting. Head restraints on front seats. Inertia reel seat belts front and rear. Lap belt centre rear seat. High-impact laminated windscreen. Electrically heated tailgate window. Tailgate wiper and washer. 2 speed windscreen wipers and electric windscreen washers. Intermittent wipe/wash.

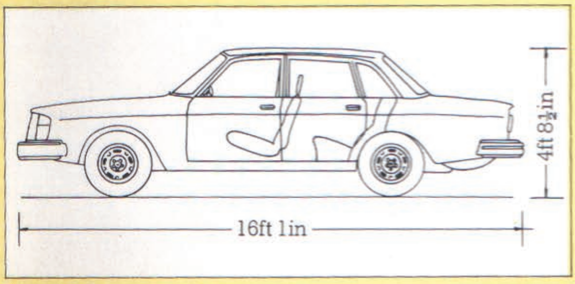
Halogen headlights. Automatic day running lights. Automatic reversing lights. Rearview door mirror, driver's side. Cargo area courtesy light. 3 speed fan. 12 inlet heating and ventilation system. Child proof locks in both rear side doors and tailgate. Towing points front and rear. 29.5 cwt gross towing weight.

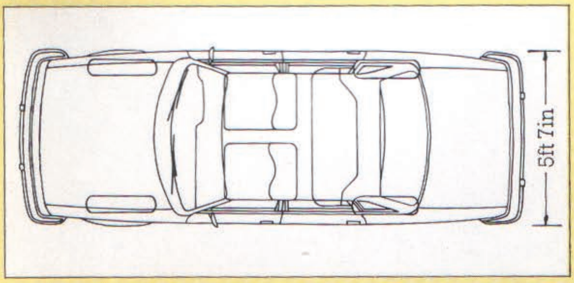
Mud flaps.
32 ft 2 in turning circle.

Additional standard equipment 245 GL models only
Tachometer (manual gearbox). Tinted glazing all round. Metallic paint. Overdrive on manual gearbox, heated seat, GL steering wheel.

VOLVO 244

	244 DL	244 GL
CC	2127	2127
No of cylinders	4	4
HP at r/m (DIN)	100/5250	123/5500
Carburation system	Single carburettor	CI fuel injection
Octane rating	93	93
Fuel tank capacity	13.2 imp gall/60 litre	13.2 imp gall/60 litre
Transmission	4 speed manual (automatic transmission available)	4 speed manual with overdrive (automatic transmission available)
Wheels	5J - 14 in	5.5J - 14 in
Tyres	Steel braced radial ply 175 SR 14	Steel braced radial ply 175 SR 14
Length	16 ft 1 in	16 ft 1 in
Width	5 ft 7 in	5 ft 7 in
Height	4 ft 8½ in	4 ft 8½ in
Kerb weight	1290 kg (2840 lb)	1310 kg (2890 lb)





Standard equipment 244 DL, 244 GL
Dual circuit, power assisted disc brakes, triangle-split.

Safety cage construction, side impact protection, roll over bar, 5 way collapsible steering system, impact absorbing bumpers.

Rheostat controlled instrument lighting. 6 figure mileometer. Tripmeter. Coolant temperature gauge. Warning lamps for choke, handbrake application and brake failure. Bulb integrity sensor. 4 way hazard warning lamps. Glove box light. Clock. Cigar lighter. 'Fasten seat belts' reminder (front and rear). Vanity mirror. Drivers door mirror. Door storage bins. Illuminated rear ash tray.

Driver's seat lumbar support and height adjustment. Cloth upholstery, full carpeting. Head restraints on front seats. Inertia reel seat belts front and rear. Centre armrest in rear seat. Lap belt centre rear seat.

High-impact laminated windscreen. Electrically heated rear window. 2 speed windscreen wipers and electric windscreen washer. Intermittent wipe/wash.

Halogen headlights. Automatic day running lights. Automatic reversing lights. Boot light.

Day/night rearview mirror. 3 speed fan. 12 inlet heating and ventilation system. Child-proof rear door locks. Towing points front and rear.
29.5 cwt gross towing weight.
21.5 cu ft boot capacity.

Mud flaps.
32 ft 2 in turning circle.

Additional standard equipment 244 GL models only
Tachometer (manual gearbox). Tinted glazing all round. Leather faced upholstery. Electrically heated driving seat. Deep pile carpet throughout. Foam covered steering wheel. Sun roof. Metallic paint.